



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/419,620	10/15/1999	JONG WOOK PARK	0465-0716P	1535
2292	7590	06/30/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			NGUYEN, DUNG T	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/419,620

Applicant(s)

JONG W. PARK

Examiner

Dung Nguyen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,7,9-11,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,7,9-11,14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/17/2004 has been entered.
2. Applicant's amendment dated 05/13/2004 has been received and entered. By the amendment, claims 1, 6-7, 9-11 and 14-15 are now pending in the application.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1, 6-7, 9-11 and 14-15 are reject under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA), in view of Applicant's submitted prior art, Katsuto, JP 5-323324 and Mishina et al., US Patent No. 5,954,999.

Regarding the above claims, APA discloses a method of forming a liquid crystal display (LCD) comprising the step of forming a LCD cell and heating the LCD cell (specification, page 3, lines 4-12). Furthermore, the heating step ($t=100^{\circ}\text{C}$)(specification, page 3, line 8) is performed at the temperature that is less than a curing temperature of the sealant ($t=180^{\circ}\text{C}$)(specification, page 8, line 4). It should be noted that the step of

Art Unit: 2871

forming an alignment layer, sealant, laminating and injection a liquid crystal layer would be inherent to the step of forming the LCD cell.

APA fails to disclose the heating step being performed at a temperature which is substantially equal to a baking temperature of the alignment layer. Mishina disclose a baking temperature of the alignment layer can be selected from -5° C to 100°C (col. 4, line 58). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to bake an alignment layer at 100° C as shown by Mishina, so as the heating temperature of the APA's LCD cell is substantially equal to a baking temperature of the alignment layer in order to product a liquid crystal alignment film which has a high tilt angle and excellent in electrical properties of LCD devices (see Technical Field).

Regarding claims 6-7, 9 and 11, APA does not disclose the heating temperature and based material for the alignment layer. One of ordinary skill in the art would have realized the desire to form a polyimide based material or photo-alignment material (e.g., polysiloxane) for an alignment layer depending on the method of forming such alignment layer (i.e., rubbing or lighting). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to heat an LCD cell at a predetermine temperature as well as to use a polyimide based for the rubbing alignment layer and polysiloxance based material for the lighting alignment layer because it is a common practice in the art to perform a stable alignment layer in the LCD cell.

Response to Arguments

5. Applicant's arguments filed 05/13/2004 have been fully considered but they are not persuasive

Applicant contends that nowhere does Applicant's related art disclose or suggest performing the heating process at a temperature which is substantially equal to a baking temperature of the alignment layer (amendment, page 6). In addition, Mishina et al. reaction temperature is not the baking temperature of the alignment layer (amendment, page 7). The Examiner respectfully disagrees with Applicant's view point. In particular, although Applicant's related art does not explicitly disclose that the heating step is performed at a baking temperature of the alignment, Applicant's related art do disclose performing the heating process at a temperature of 100°C which is equal to a baking temperature of the alignment layer (e.g. Mishina et al. reaction temperature). It should also be noted that, as stated in the previous office action, the polyimide precursor is a material used to form an alignment layer; thus, one skilled in the art would be able to merely find that "reaction temperature" for polymerizing and/or polyimide precursor would be the temperature used to form such alignment layer. In other words, the Applicant's related art do disclose such heating step being performed at the baking temperature of the alignment layer.

Accordingly, the limitation of the above claims met.

Art Unit: 2871


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
06/08/2004


Dung Nguyen
Primary Examiner
Art Unit 2871